

A. Exon 1

Bsal BseRI SfiI - EarI
 AGCTCAGAGACCCAGAGCCGCTCACAAATCACACAGGCTCTCCCGCCACGCACTGTGGCTTGGGCAACACGCTACAGGAAGAGGGGGGCTGGGCGGCCACCGCGCT
 TCGAGTCTCTGGGTTCTCGGCGGAGTGTATGTGTGTCGAGGAGGGGCGGGTGCGTGACGACGAAACCCGTTGTGGGATGTCTTCTCCGCCCGACCCCGCGGGTGGCGGA
 EaeI BssHII EcoNI BamHI Sadi
 GATTGGCCGGAGCGCGCTGACGCGAGGATCCCGCTATAAAGTGGCGCCCGTGGTCCCTACGCGCAGAGCTTCTCGCCAGATTCGCGCGGTTTCTGCTTCAACAGTGTGAA
 CTAACCGGCTCGCGGAGTCTAGGGCGATATTTACGCGCGGGGACGAGGATGCGGTCTGCAAGAGCGGGTCTCAGCGGCGCCAAAGGACGAAGTTGTCAAGAACT
 BshKAI PshAI EagI Bpu10I BspBI
 ACCGAACCGGCTGCTGACCCCTCGACCCCGCTCCGCGCGCTTTGAGCCTGAGCCCTTTGCAACTTCGTGCTCCGCGCTCCAGCGTCCGCTCCGCGCTCCGCTCCAGCGCGC
 TGCCTTGGGCGACGAGCTGGGAGGCTGGGGGACAGCCCGCGAAGCTCGGACTCGGGAAACGTTGAAACGAGCGAGGCGCGGAGGTCCGAGCGGAGCGCGGAGGTCGGCGG
 DrdI BspHI BsmBI BpmI NcoI
 ATCATGACCACCGCGTCTCCCTCGCAAGTGGCGCCAGAACTACCACAGGACTCGAGGCTGCCATCAACCGCCAGATCAACCTGGAGTTGTATGCTCTACGTCTATCTGTCC
 TAGTACTGGTGGCGCAGAGGGAGCGTTACGCGGTCTTGTATGGTGGTCTGAGCCTCGAGCGTAGTTGGCGGTCTAGTTGGACCTCAACATACGGAGGATGAGATAGACAGG
 ▶ Met Thr Thr Ala Ser Pro Ser Gl n Val Arg Gl n Asn Tyr Hi s Gl n Asp Ser Gl u Al a Al a I l e Asn Arg Gl n I l e Asn Leu Gl u Leu Tyr Ala Ser Tyr Val Tyr Leu Ser
 DrIII Adel
 ATGGTGAAGTGGCGCTGGCTTTGCGGGGCGGAAAGAGGGTGGCGCTGGCTCTCTTGGGCACTTGGTGAAGTGGCGGAGGCTGGTGGGCGGTGGTGGGCGGTGGCTGGCGG
 TACCCTCAGCGCGGACCGGAAACCGCCCGCTTTCTCCACGCGGACCGGAGGGAACCGGTGAACCACTCGACCGCTCCACCCCAACCCGACCGGACCGCGCC
 ▶ Met

B. Exon 2

Eco57I BspH
 GCATCTGCTCTGCTGGGATCAATAACAAATACCTTTCCACTTTCAGTCTTGTATTTTACCAGGATGATGTGCCCTGAAGAATCTTGCCAAATACTTTCCATCAATCT
 CGTAGACGGACGACACCCCTAGTTATTTATTTATGGGAAAGGTGAAGTACAGAACTAAACTGGCCCTACTACACCGGAGCTTCTGAAACGGTTTATGAAAGAGGTAGTTAGA
 ▶ Ser Cys Tyr Phe Asp Arg Asp Asp Val Al a Leu Lys Asn Phe Al a Lys Tyr Phe Leu Hi s Gl n Ser
 EarI NspI PstI BstXI SbfI EcoRV AccI
 CATGAAGAGAGGGAATGCTGAGAACTGATGAAGCTGCAGAACCCAGCGAGGTGGAGCAATCTTCTGAGGATATCAAGGTAAAGTAGACTATGGGACTGCGTTAAATGAGCAGT
 GTACTTCTCTCCCTTGTACGACTCTTGACTACTTGCAGCTCTTGTGCTCCCACTGCTTAGAAGGAGCTCTATAGTTCCATTCATCTGATACCTGACGCAATTTACTCGTCA
 ▶ Hi s Gl u Gl u Arg Gl u Hi s Al a Gl u Lys Leu Met Lys Leu Gl n Asn Gl n Arg Gl u Gl u Arg Gl u I l e Phe Leu Gl n Asp I l e Lys

C. Exons 3 and 4

PstI AflIII BmrI BsrBI BsmI BsrDI ApaLI BspI
 CTGCAGATGAATGACATGTTCTTTGATTCAAGAACTGACCGTGAATGACTGGGAGAGCGGGCTGAATGCAATGAGGTGTGCACTGCACTGGGAAAGAGTGTGAATCAGTCA
 GACGTCTACTTAACTGTACAAAGAACTAAGTCTTTGGACTGGCACTACTGACCCCTCTCGCCGACTTACGTTACTCCACAGCTGACGTGAACCTTTCTCACACTTAGTCAGT
 ▶ Lys Pro Asp Arg Asp Asp Trp Gl u Ser Gl y Leu Asn Al a Met Arg Cys Al a Leu Hi s Leu Gl u Lys Ser Val Asn Gl n Ser
 PmlI DrIII
 CTACTGGAACCTTCACAACTGGCTACTGACAAAGATGATCCCACTGAGTATCAGAAACACGGGTGAGTGGAGATGATTTGCCACAGGGCTTGGGAGAGCTGACCACTAACCC
 GATGACCTTGAAGTGTGACCGATGACTGTTCTTACTAGGGGTGCACTCATAGTCTTTGTGCCCACTCACCTCTACTAAACGGTGTCCGAAACCTCTCGACTGGTCATTGG
 ▶ Leu Leu Gl u Leu Hi s Lys Leu Al a Thr Asp Lys Asn Asp Pro Hi s
 BsmBI BspMI XcmI BmrI BstEII PmlI
 CTGTCCCATGTTCTCTTCTAGTTATGTGACTTCATTGAGACGCATTACCTGAATGAGCAGGTGAAATCCATTAAAGAACTGGGTGACCACTGACCACTTACGCAAGATGG
 GACAGGGTACAAAGAGAAAGGATCAATCACTGAAGTAACTCTGCGTAATGGACTTACTCGTCACTTAGGTAATTTCTTGACCACTGGTGCAGTGGTTGAATGCGTTCTACC
 ▶ Leu Cys Asp Phe I l e Gl u Thr Hi s Tyr Leu Asn Gl u Gl n Val Lys Ser I l e Lys Gl u Leu Gl u Asp Hi s Val Thr Asn Leu Arg Lys Met I G
 BsrBI MslI BspI AatII StyI BstAI
 GAGCCCTGAATCTGGCATGGCAGAAATCTCTTTGACAAGCACCCCTGGGACAGGTGATGAGAGCTAAGCTGACGTCCCAAGGCCATGTGACTTACTGGCTCACTGAGG
 CTGCGGGACTTAGACCGTACCGCTTTATAGAGAACTGTTCGTGGGACCCCTGTGCACTACTCTCGATTGCACTGCAGGGGTTCGGGTACACTGAAATGACCGAGTGAATCC
 ▶ I y Al a Pro Gl u Ser Gl y Me I Al a Gl u Tyr Leu Phe Asp Lys Hi s Thr Leu Gl y Hi s Gl y Asp Gl u Ser ***
 Ppu10I NsiI XapI Apol KpnI
 EcoT22I AclI BsrI
 SphI
 CAGTGCATGATGTGAGGCTGCTTTATCTTTCTATAAGTTGCACCAAAACATCTGCTTAAAGTTCTTAAATTTGTACCATTTCTTCAAATAAAGAAATTTGGTACCCAGCT
 GTCACTACGTACAGTCCGACGGAAATAGAAAAGATATTCAACGTGGTTTTGTAGACGAATTTCAAGAAATTAACATGGTAAAGAAATTTATTTCTTAAACCATGGGTGCA
 SspI
 CTTGTTGTGATTGAGGATGAGCGCACCGAGCTTCCCTTGCCTGGCTATATAACACACTGCAACCGCTGAAAGAAATATTTATTAATCTCGTATTTGGGGAAGATAGTGAAGA
 GAACAACACTAACTCCTACTCGCTGGTGGTGAAGGAAACGACCGGATATATTGGTGTGACGTTGCGGACTTTCTTATAAATAATTTGAGCATCAACCCCTTCTATCACTTTCT
 DseDI DrdI BspMI NcoI XmnI SmlI
 CAGGTGTGTTGACAGGAGTAAGCAGTCTGGTTCTGAGTTACTGCGCAGACTGCCATGGGAACATATTCTTGAGTGTG
 GTCCACACAGTCTGTCTGATTCTGTCAGGACCAAGACTCAATGACGGTCTGACGGTACCTTGTATAAGAACTCACAG

FIGURE 1

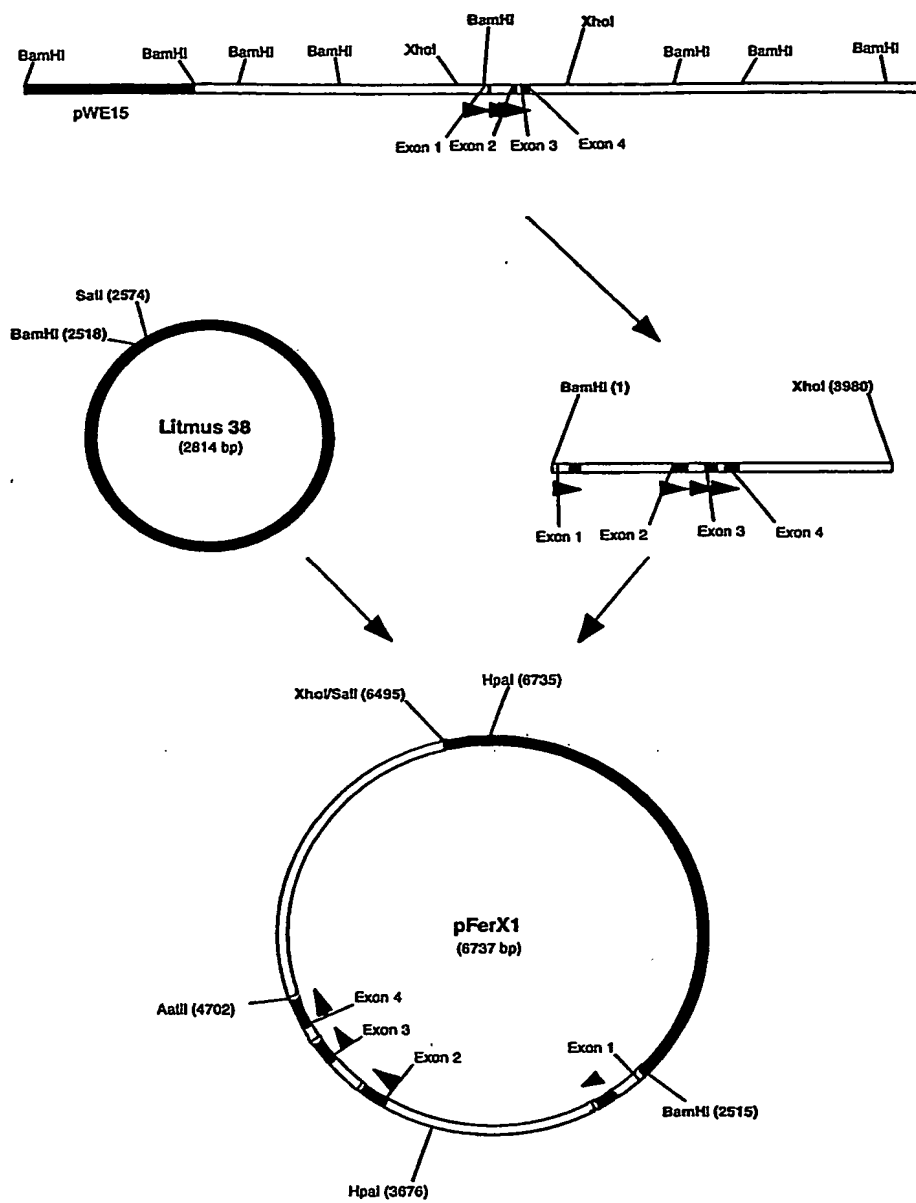


FIGURE 2

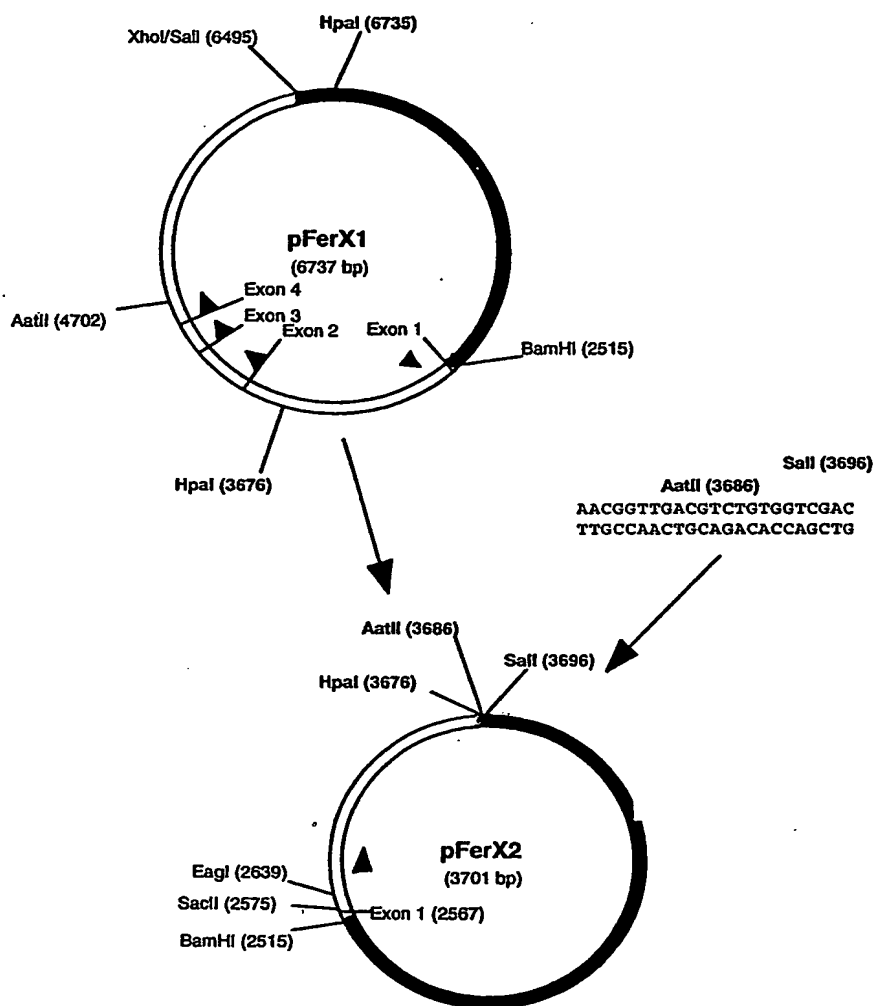


FIGURE 3

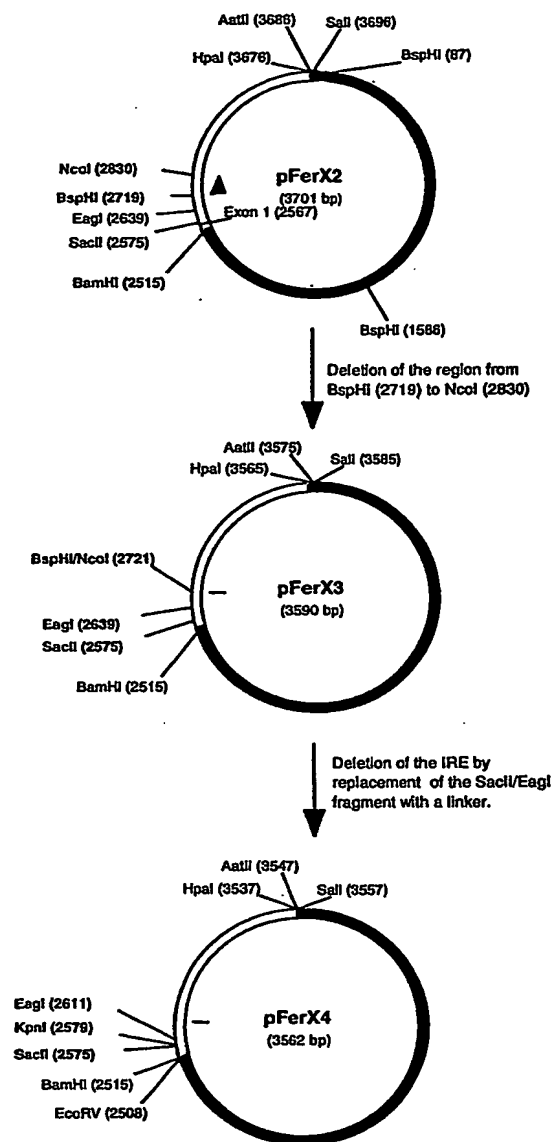


FIGURE 4

[illegible]

Fer1
ATC TGT CCA TG GTGAGTGGCGGCTGGGCTTTGGCGGGGCGGAAGAGGGTGCGGCTGGGCTCCCTTGGGCCACTTGGTGTAGCTGGCGGAGGG

TTGGTTGGGGCGTGGCCTGCTGCGGGCTTCCCGCCTTCCAGCGCCCTTCTGGAAATGGAGTTTGTCCGGGGTTCTTTCCAAGGCAGGCAGCCCTT
GCCGTGGCAAGTCTGAGCACCTAGCGCTTTGTGGCTCCTGCATAGCAGGACGCATTAACACCCCGTGTTTTGAAGCCTTAGGGCTGTACAACCTGT
CAGCCTCTCAATCAACCTCGAGTTAGGTGATTTTCTGCACTCTGCGCCCTCGGTCACATGGCCTCGAGGCTTCTCTGTTTGGGTGTACATC
CAGCTCCAGTTCTCTGACTATGGCGGGTCTGCTTGGTCATGGTGTGGAATGGCAGCCCTGGGGCTTGGTACAAGAGGCTTATCTCTGTGAACTT
ACTCTAACCACTTCTGAAGCAGCGGCTCTACATCTCTGCTTATCAGAGCCCTCACTTGCATTGAAACTTATCGCTAGGAATCTCCCCCTCTGTAA
TCACCTTGACCTTGGCAAGGCATCTAGAGTACTGTACGTTTTAAATTTTTATTTTGACCACTGTGTTGCTTACTAACAGAAGTAGTAGGTAAACATAC
TTGTTGGAAAAAGCCACGGTTGGGAAAAAACATTATCGTGAATACAAATACACTGAGTGCTAAAACCTGAAATCAAAGCTTCTCCCAATGTAT

HpaI
TTGTGCTAAAATACAATGCCCTCAGTTCTTAAACGAGTAATCAGCAGTTGGCTGTCTAGCTGAAAACCTTGAGACCTTGGTTTAAACATTTTTTTTA
TTTAACATGATTGTTGAAGGAGAGAATTGACCTCCCAATGTAGGGCACTTTAGCACCCCCCTCTCAGACAAATAGATATGGCCTTGGCTTAAAGTT
TTTTCTCTGCACTAATGTGGAGCCATAGAAACCTTGATAAAGCCAAGTCCCAAGTTTGTTTTCCCATCTTACTTTTAAAGGCCAAGTAGGGTGACAA

SwaI NotI FNI
ACAGCCTTTACCACCATTCATCTGCCTTGTGTGGGGATCAATAACAAATACCCCTTTTCCACTTTTCCAGCTGCTAGCGGGCCGCGCTGACGT

FIGURE 5A

C.

FN1 Swa-1 NotI AatII
 ACTTTTCAGCTGCTAGCGGCGCGCTGACGTCCCAAGGCCATGTGACTTTACTGGTCACTGAGGCAGTGCATGCATGTCAGGCTGCCTTTATCTTT
 TCTATAAGTTGCACCAAAACATCTGCTTAAAGTCTTTAATTTGTACCATTCTTCAAATAAAGAATTTTGGTACCCAGCTCTTGTGTGATTG
 Fer4

D.

Fer1
 ATC TGT CCA TG OTGAGTGCAGGCTTGGCCTTTGGCGGGCGGAAAGAGGGTGCAGGCTGGCCTCCCTTGGGCCACTTGGTGAGCTGGCGGAGGG
 TGGGTTGGGGCGTGGCCTGCTGCGGGCTTCCCGCCTTCCAGCGCCCTTCTGGAAAATGGAGTTTGTCCGGGGTTCTTCCAAAGGCAGGCAGCCCT
 GCCGTGGCAAGTCTGAGCACCTAGCGCTTTGTGGCTCCTGCATAGACCAGGCACGTCAATAACACCCGTGTTTTGAAGCCTTAGGGCTGTACAACCTGT
 CAGCCTCTCCAATCAACCCCTGCAGTTAGGTGCATTTTCTGCACTCTCGTCCCTCCGGTCACATGGCCTGCAGGCTTCTCTGTTTGGGTGTACATC
 CAGCTCCAGTTCTCTGACTATGGCGGGTCTGCTTGGTCACTGGTGTGGAATGGCAGCCCTGGGGCTTGGTACAAAGAGGCTTATCTCTTGTGAACCTT
 ACTCTAACCACTTCTGAAGCAGCGGCCTCTACATCTCTGCTTATCACAGAGCCTCACTTGCAATTGAACTTATCGCTAGGAATCTCCCTTCTGTAA
 TCACCCTGACCTTGGCAAGGCATCTAGAGTACTGTACGTTTTTAATTTTTATTTTGCACCAGTTGTTGCTTACTAACAGAAGTAGTAGGTAAACATAC
 TTGTTGGAAAAGCCACGGTTGGGAAAAAACATTATCGTGGAATACAAATACACTGAGTGCCTAAACTGAAAATCAAAGCTTCTCCCAATGTAT
 HpaI
 TTGTGCTAAAATACAATGCCCTCAGTTCTTAACCAGGTAATCAGCAGTTGGCTGTCTAGCTGAAAACCTTGAGACCTTGTGTTAACCATTTTTTTTA
 TTTAACATGATTGTTGAAGGAGAGAATTGACCTCCCAATGTAGGSCACTTTAGCACCCCCCTCTCAGACAAATAGATATGGCCTTGGCTTAAAGTT
 TTTTCTCTGCACTAATGTGGAGCCATAGAACCCTTGATAAGCCAAGTCCCAAGTTTGTGTTTCCCATCCTTACTTTAAAGGCCAAGTAGGGTGACAA
 Swa-1 SwaI Swa-2 NotI AatII
 ACAGCCTTTACCACCATTCATCTGCCTTGCTGTGGGGATCAATAACAAATACCCCTTCCATTTAAATCTGCTAGCGGCGCTGACGTCCCAAGGC
 CATGTGACTTTACTGGTCACTGAGGCAGTGCATGCATGTCAGGCTGCCTTTATCTTTCTATAAGTTGCACCAAAACATCTGCTTAAAGTCTTTA
 Fer4
 ATTTGTACCATTTCTTCAAATAAAGAATTTTGGTACCCAGCTCTTGTGTGATTG

FIGURE 5 B

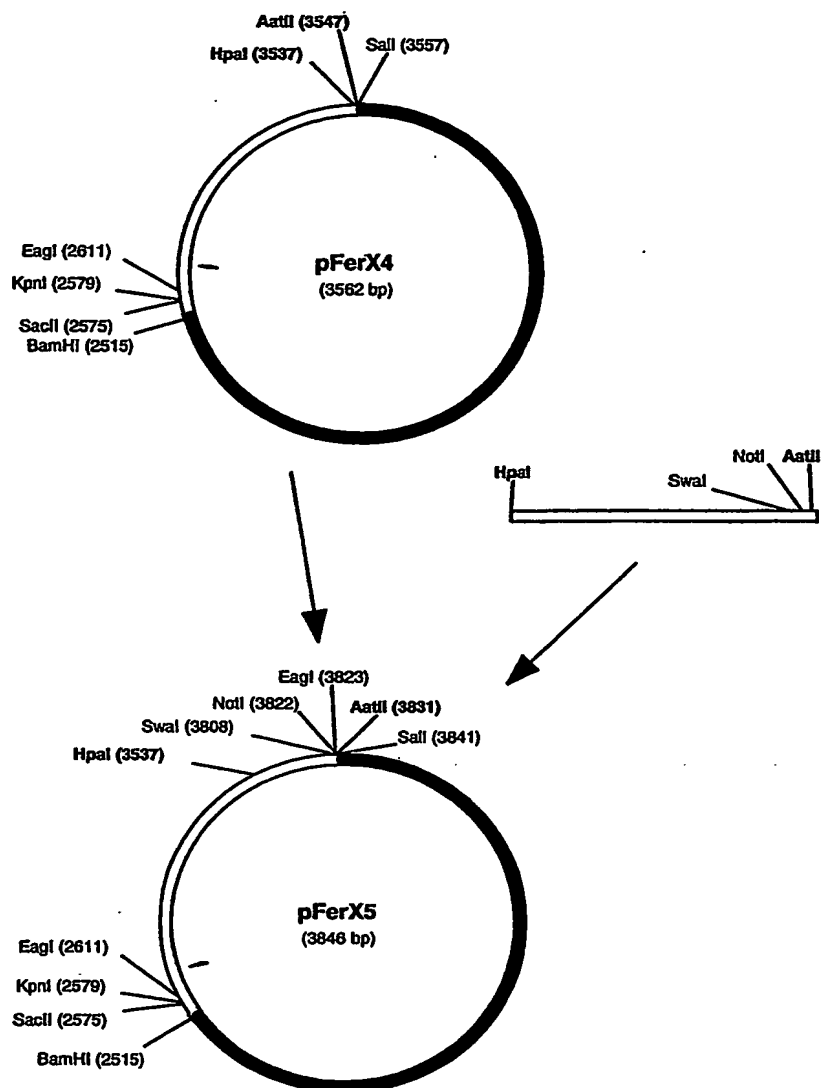


FIGURE 6

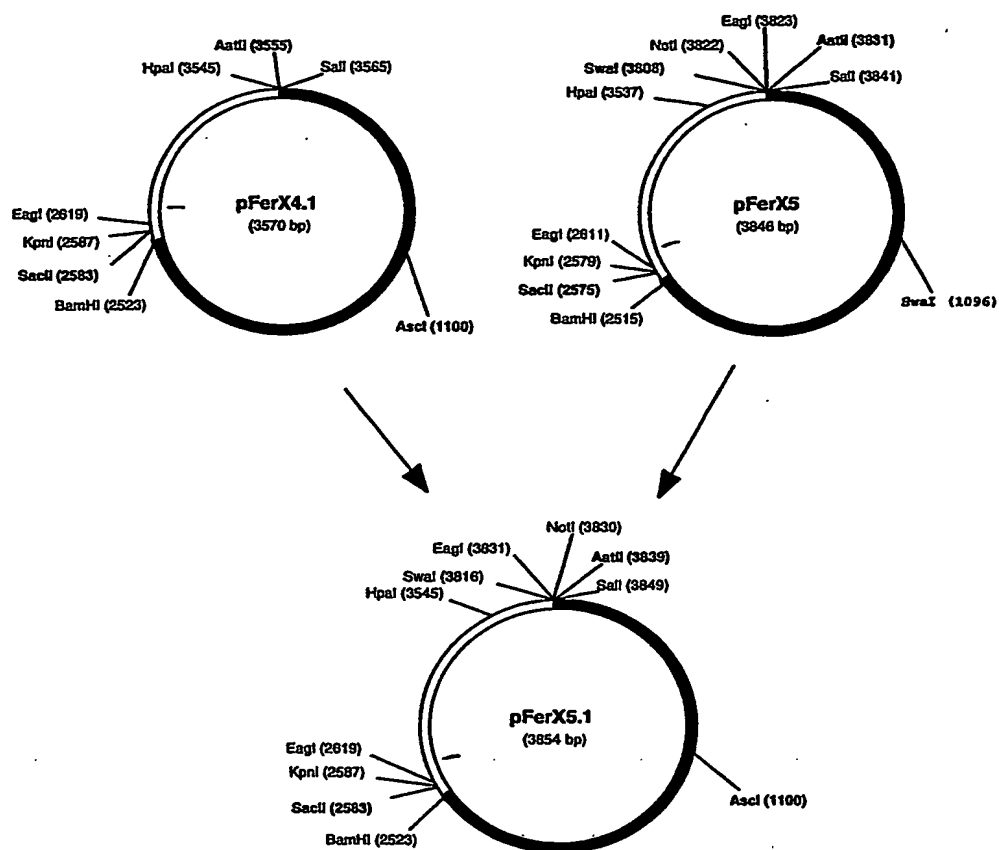


FIGURE 7

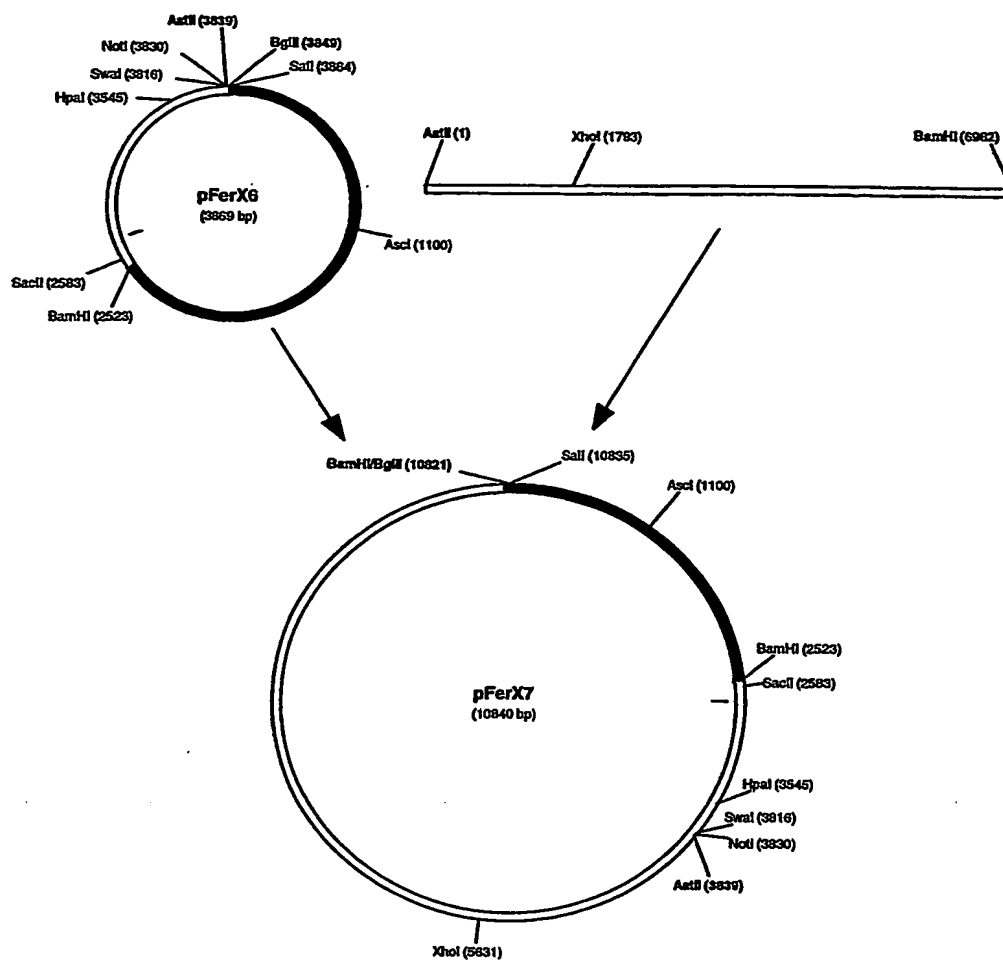


FIGURE 8

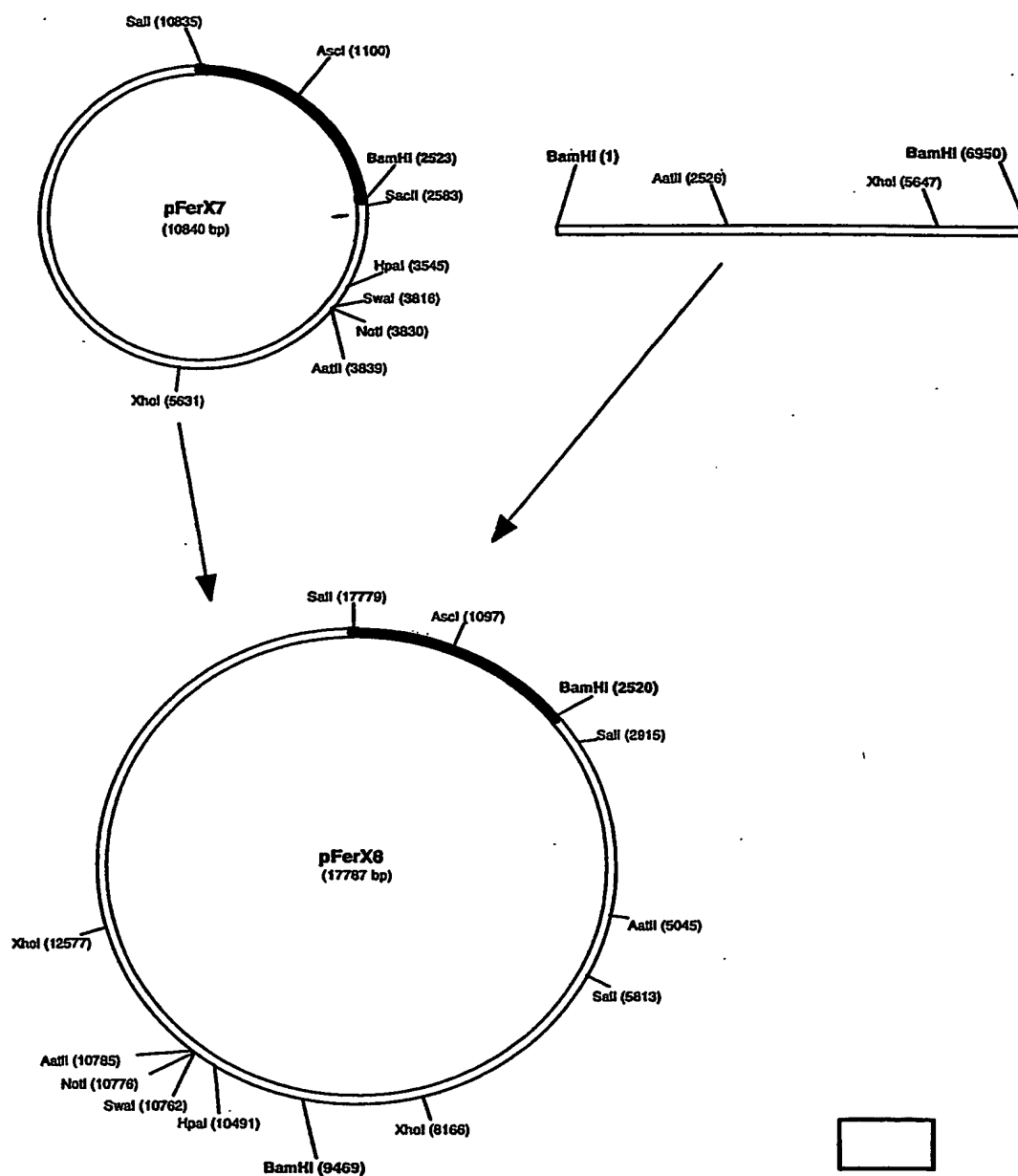


FIGURE 9

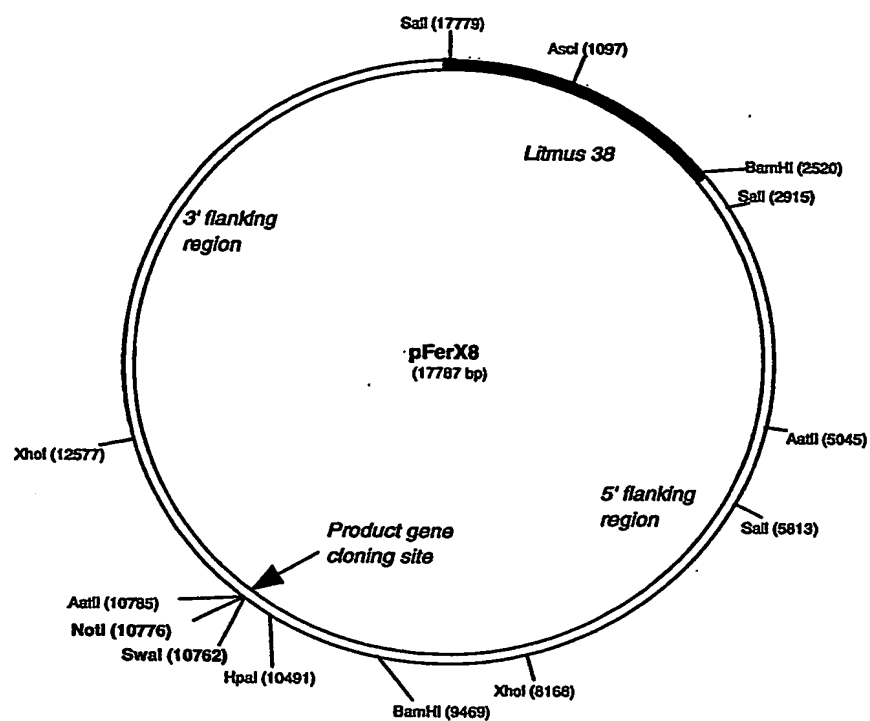


FIGURE 10

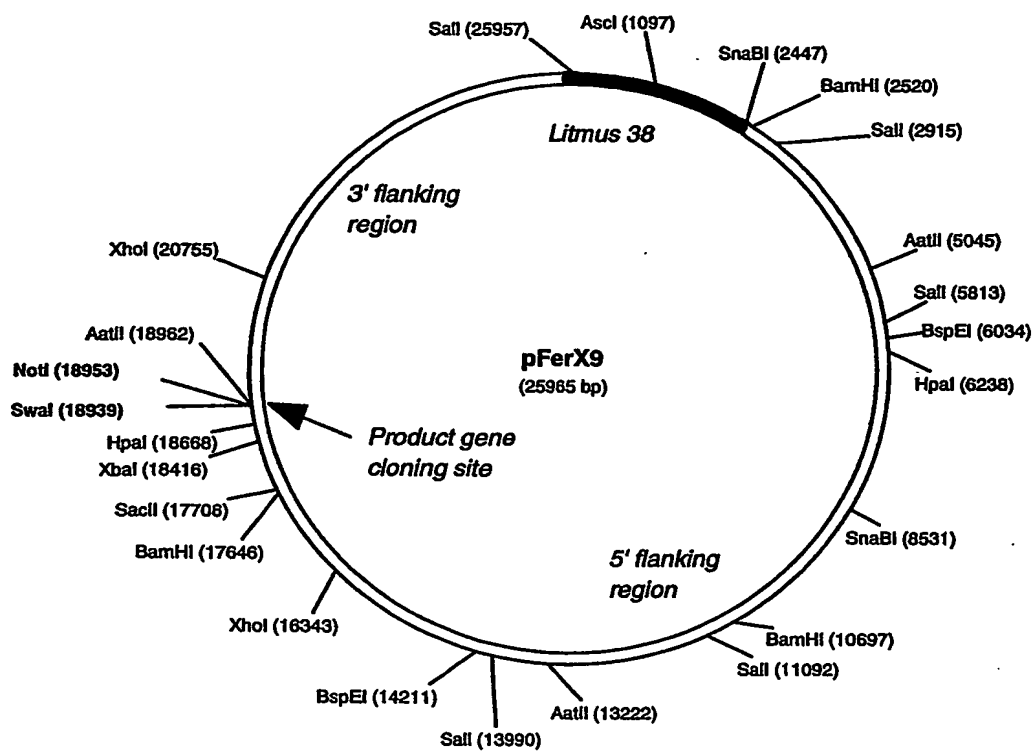


FIGURE 11

BamHI (9469) SacII
CAP (9521) KpnI (9533)
GGATCCCGCTATAAAGTGC GGCCCGCTGGTCCCTACGCCAGACGTTCTCGCCAGAGTCGCCGCGGTACCGGTGCTCG
ACCCCTCCGACCCCGTCCGGCCGCTTTGAGCCTGAGCCCTTTGCAACTTCGTGCTCCGCCGCTCCAGCGTCGCCCTC
CGCGCCTCGCCAGCCGCCATC ATG gtgagtgcggcctggcctttggcggggcggaagaggggtgcggcctggcct
Met
cccttggggcacttggtagctggcggaggggtgggttggggcgtggcctgctgcgggcttccccgccttccagcgccc
ttctggaaaatggagtttgtcgggggttctttccaaaggcaggcagccctgccgtggcaagtctgagcacctagcgct
ttgtggctcctgcatagaccaggcacgtcataacaccctgttttgaagccttagggctgtacaactgtcagcctctc
caatcaaccctgcagtttaggtgcattttcctgcactctcgtccctccggtcacatggcctgcaggttctctgtttg
ggtgtacatccagctccagttcctctgactatggcgggtctgcttgggtcatgggtgtggaatggcagccctggggcttg
gtacaaagaggcttatctctgtgaacttactctaaccacttctgaagcagcggcctctacatctctgcttatcacag
agcctcacttgcattgaaacttatcgctaggaatctcccttctgtaatcaccctgaccttgccaaggcatctagagt
actgtacgtttttaatttttattttgcaccagttgttgcttactaacagaagtagtaggtaacatacttgttggaaaa
agccccaggttgggaaaaaaccattatcgtggaatacaaatacactgagtgccctaaaactgaaaatcaaagcttctcc
caatgtatttgtgctaaaaatacaatgccctcagttcttaaccaggtaatcagcagttggctgtctagctgaaaacctt
gagaccttgtgttaaccattttttttatttaacatgattgttgaaggagagaattgacctcccaatgtagggcacttt
agcaccccccctctcagacaaatagatatggccttggcttaaagtttttctctgcactaatgtggagccatagaacc
cttgataaagccaagtcccaagttgttttccatccttactttaaggccaagtaggggtgacaaacagcctttacca
AatII (10785)
ccattgcatctgccttgcgtgtggggatcaataacaaataccctttccatttAAATCTGCTAGCGCCGCTGACGTCCC
CAAGGCCATGTGACTTTACTGGTCACTGAGGCAGTGCATGCATGTCAGGCTGCCTTTATCTTTTCTATAAGTTGCACC
SwaI (10762) NotI (10776)
AAAACATCTGCTTAAAAGTTCTTTAATTTGTACCATTCTTCAAATAAAGAAATTTGGTACCCAGCTCTTGTTGTGAT
KpnI (10927)
TGAGGATGAGCGCACCAGCTTCCCTTGCCTCGGCTATACTAACCACACTGCA

FIGURE 12

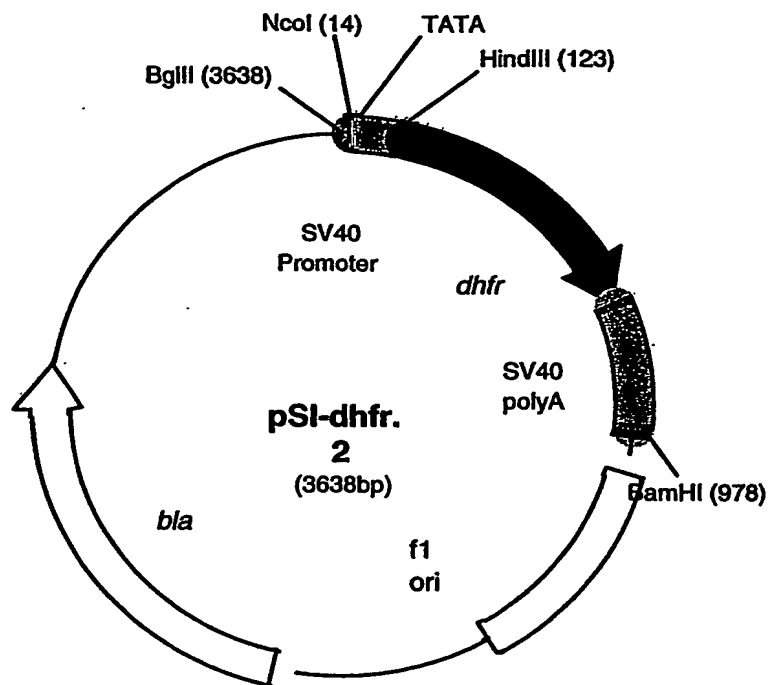


FIGURE 13

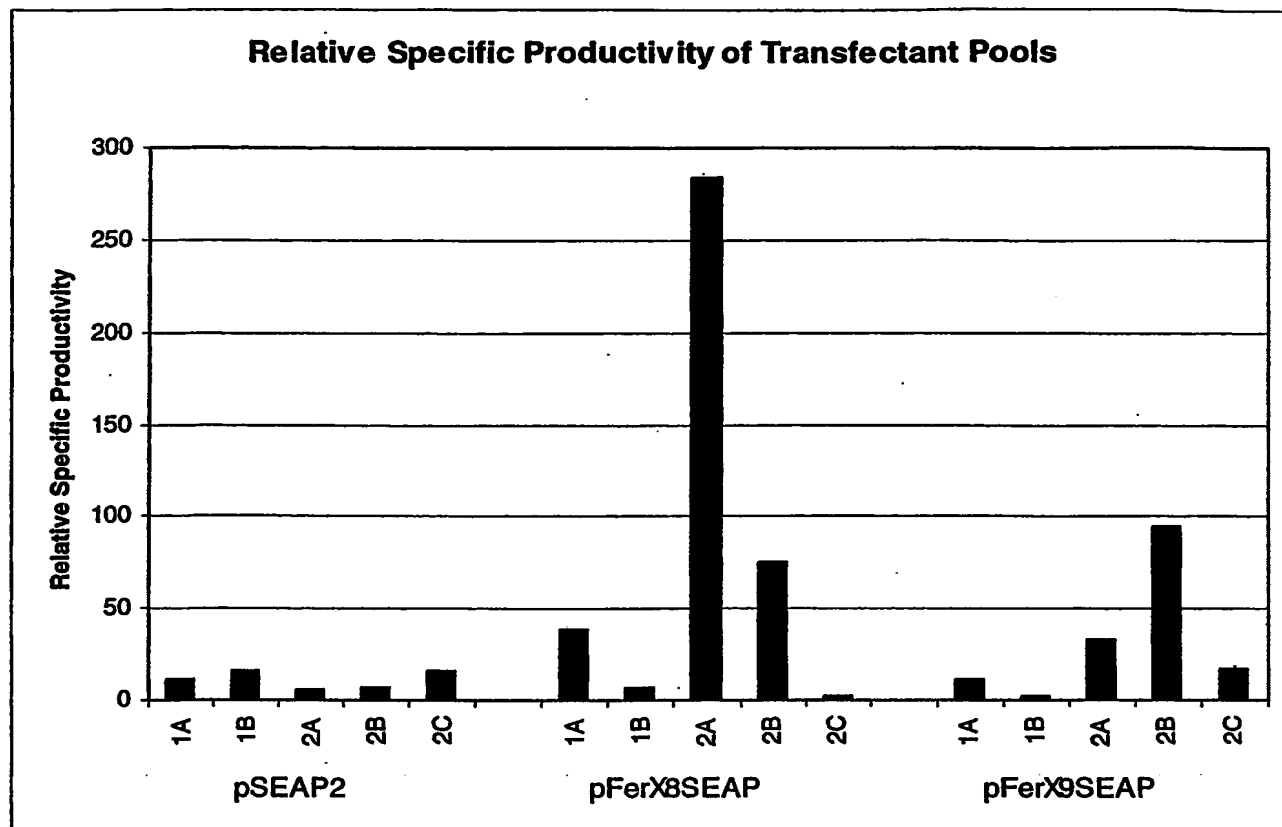


FIGURE 14

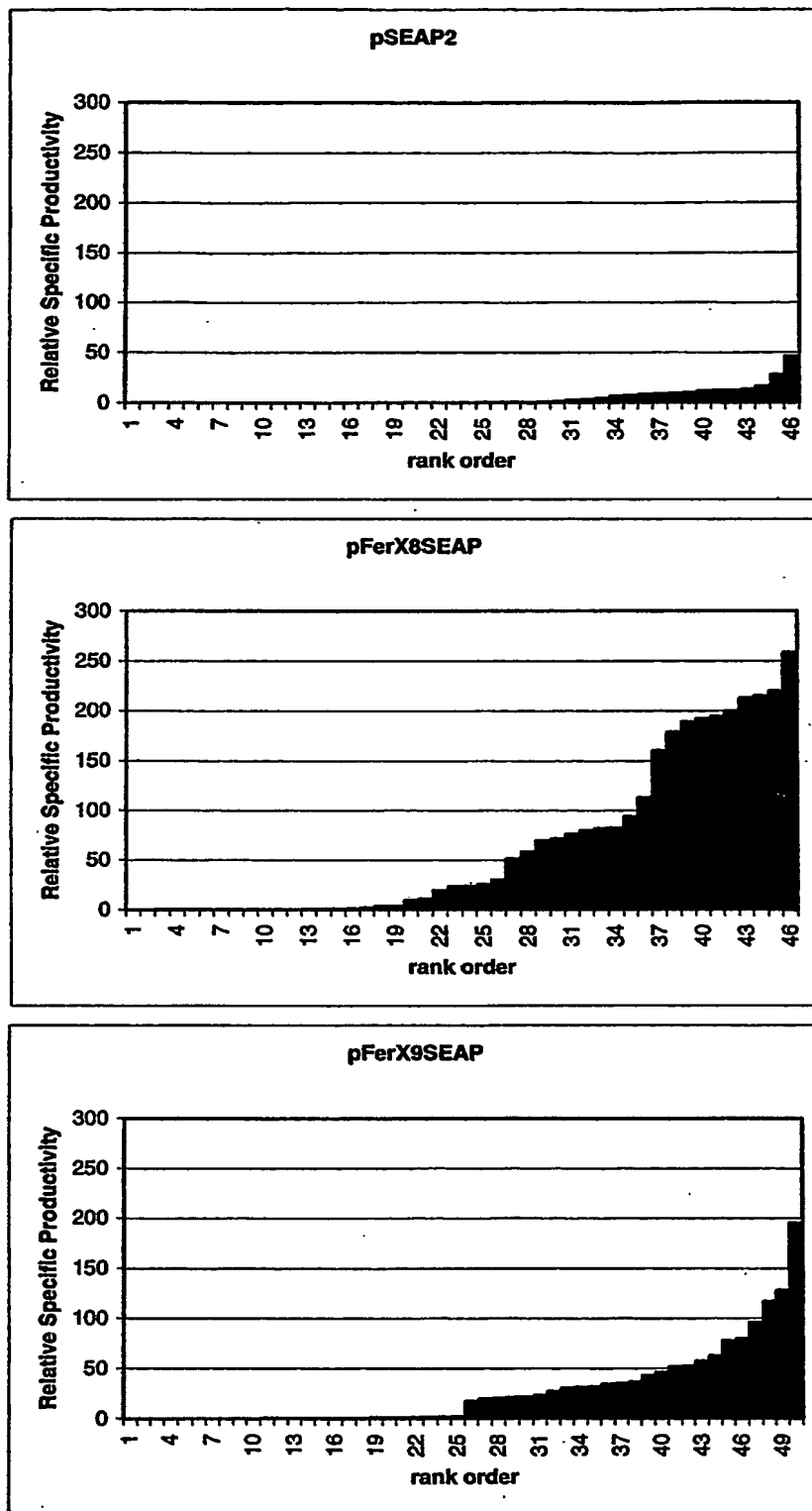


FIGURE 15